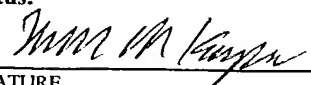


FORM PTO-1390 (REV. 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER <b>GES 201</b>	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) <b>10/031250</b>	
INTERNATIONAL APPLICATION NO. <b>PLT/ES00/00343</b>		INTERNATIONAL FILING DATE <b>13 SEP. 2000</b>		PRIORITY DATE CLAIMED <b>23 FEB 2000</b>	
TITLE OF INVENTION <b>IMPROVED ARRANGEMENT TO CONFIGURE CONSTRUCTION COMPONENTS</b>					
APPLICANT(S) FOR DO/EO/US <b>SANCHEZ NINA, Marino Enrique</b>					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> is attached hereto.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p style="margin-left: 20px;">c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p style="margin-left: 20px;">d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input checked="" type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p><b>Items 11 to 20 below concern document(s) or information included:</b></p> <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A <b>FIRST</b> preliminary amendment.</p> <p>14. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input checked="" type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>					

531 RECEIVED 23 OCT 2001

U.S. APPLICATION NO. <b>10/031250</b>		INTERNATIONAL APPLICATION NO. <b>PCT/ES 00/00343</b>		ATTORNEY'S DOCKET NUMBER <b>GES201</b>	
21. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO..... \$1000.00  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO ..... \$860.00  International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00  International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00 <b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>CALCULATIONS PTO USE ONLY</b>	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	
Total claims	2 - 20 =		x \$18.00	\$	
Independent claims	1 - 3 =		x \$80.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				\$ 890.00	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.				\$ 445.00	
<b>SUBTOTAL =</b>				\$ 445.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
<b>TOTAL NATIONAL FEE =</b>				\$ 445.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$	
<b>TOTAL FEES ENCLOSED =</b>				\$ 445.00	
				Amount to be refunded:	\$
				charged:	\$
a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>11-0224</u> . A duplicate copy of this sheet is enclosed. d. <input checked="" type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.					
<b>NOTE:</b> Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Horst M. Kasper</b>  <b>13 Forest Drive</b>  <b>Warren, N.J. 07059</b> </div> <div style="width: 45%; text-align: right;">           SIGNATURE  <b>HORST M. KASPER</b>          NAME  <b>28,559</b>          REGISTRATION NUMBER       </div> </div>					

3/PRTS

531 Rec'd PCT.

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23 OCT 2001

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IMPROVED ARRANGEMENT TO CONFIGURE CONSTRUCTION  
COMPONENTS

D E S C R I P T I O N

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**OBJECT OF THE INVENTION**

The present specification refers to an application  
for Patent of Invention regarding an improved  
10 arrangement to configure construction components, whose  
basic interests lies in providing a combination of  
metal and plastic, allowing the manufacture of  
construction parts achieving an assembly with  
properties which would not be possible by using said  
15 materials separately.

**FIELD OF THE INVENTION**

This invention is applicable to the industry  
dedicated to the manufacture of structural construction  
components for general use in engineering and  
20 architecture.

**BACKGROUND OF THE INVENTION**

The existence of concrete made from a mixture of  
cement, water, aggregates and additives is known, to  
form parts participating in the execution of building  
25 works, it being possible to use mass concrete or  
reinforced concrete which improve their mechanical  
properties on incorporating metallic reinforcements.

However, it would be desirable to have the  
possibilities offered by materials like plastic, that  
30 is, to provide essential characteristics it lacks for  
its inclusion in this type of activity.

The applicant is not aware of arrangements with  
the properties and level of improvement as those of the  
object of the present invention.

35 **DESCRIPTION OF THE INVENTION**

The improved arrangement for the configuration of construction components has a series of advantages requiring a detailed explanation.

It is relevant to indicate that the combination of plastic with metal provides a composite having better mechanical features than those individually offered by the separate materials, it being possible to mention:

- Resistance
- Durability
- 10 • Lightness
- Colour
- Resonance or minimum vibrations
- Texture
- Conformability
- 15 • Corrosion resistance
- Reduced conductivity
- Economic
- Easy to handle in its application and use

All these features integrate the base supporting the key of the invention.

The object of the invention consists of an internal metal structure over which a plastic casting is located.

The proposed arrangement permits the limits of either component to be surpassed with the benefits offered by the other, constituting a body providing symbiosis between both materials.

The plastic used to conform the combination will be different according to the requirements of each specific situation, having a plurality of metallic components to constitute the structure located inside the external material.

Moreover, a metallic reinforcement laminate or plate is provided in the bolted joints, preventing the drawbacks they involve.

By using moulds, the casting of plastic material is achieved employing any of the processes currently used for the metallic structure to be covered by it.

The sizing and shape of the parts are determined  
5 by criteria related to the ease of practical handling, resistance, weight and economy.

The invention proposed may be used in the production of any type of part with applications directed to construction and installation in general.

#### 10 **DESCRIPTION OF THE DRAWINGS**

To complete the description being made and to contribute to a better understanding of the features of the invention, the present specification is accompanied by three sheets of drawings showing the following with  
15 an illustrative and non-limiting character:

Figure 1 shows a side elevation view of rails and beams prepared as from the improved arrangement to configure construction components.

Figure 2 shows a section view of the rail or beam  
20 considered in the previous figure, in which the plastic enveloping material, the metal plates and reinforcement may be observed.

Figure 3 shows a view of different sections in which the enveloping material and metallic components occupying the interior are distinguished, such that  
25 section A correspond to a pipe, section B to a rod, section C to a channel, section D to an angle, section E to a flatbar, section F to a "Z", section G to a profile and section H, to a beam.

Figure 4, contemplates a view of two sections where the outer plastic and inner metal covers are observed, such that section I represents a corrugated  
30 plate and section J, a smooth plate.

Figure 5, refers to a side elevation view of a  
35 structure formed by a beam and a column joined by

bolts.

#### PREFERRRED EMBODIMENT OF THE INVENTION

The improved arrangement to configure construction components is constituted as from the combination of  
5 two materials, namely plastic and metal.

The plastic used has different properties according to the types determined for each case, receiving the generic name of enveloping material (2) or (12) or (22) or (32) or (42) or (52) or (62) or (72)  
10 or (82) or (92) or (102) or (112), it being possible to mention different types of plastic resin, Thermo and Duraplastic, like phenoplastes, polycarbonate, ABS, polyethylene and resins.

On the other hand, the metallic material (3) or  
15 (13) or (23) or (33) or (43) or (53) or (63) or (73) or (83) or (93) or (103) or (113) incorporated, has any form according to the selected application, its configuration being possible as from G-40 corrugated steel with a resistance value of 2,800 Kg/cm<sup>2</sup>, G-60  
20 corrugated steel with a resistance value of 4,200 Kg/cm<sup>2</sup>, rods, electrowelded meshes, reinforcements, frames or shears, zinc and aluminium plates or steel tolas, wires and cables.

The combination is produced such that inside the  
25 plastic casting (2) or (12) or (22) or (32) or (42) or (52) or (62) or (72) or (82) or (92) or (102) or (112), the metallic structure (3) or (13) or (23) or (33) or (43) or (53) or (63) or (73) or (83) or (93) or (103) or (113) is introduced, obtaining a body in which the  
30 constitutive components compensate the lacks of the individual materials.

Likewise, the existence of a metallic laminate or plate (4) and (4') or (84) or (114) and (114'), which act as a reinforcement to prevent the external plastic  
35 casting (2) or (12) or (22) or (32) or (42) or (52) or

(62) or (72) or (82) or (92) or (102) or (112) from checking or splitting, problems that arise as a result of the stresses and shearing taking place in the bolted joints.

5 With the object of reaching the final shape, a mould is prepared permitting casting of the plastic material (2) or (12) or (22) or (32) or (42) or (52) or (62) or (72) or (82) or (92) or (102) or (112), the component enveloping the internal metallic structure  
10 (3) or (13) or (23) or (33) or (43) or (53) or (63) or (73) or (83) or (93) or (103) or (113), using for this object any of the methods permitted.

It is reasonable to make use of processes like casting by injection, extrusion, direct casting, by  
15 transfer or cold.

In the joints or extensions of the parts or components, a fastening will be used that permits the determined resistance and statism making use of plates and bolts, assemblies, plastic-resistant adhesives or  
20 combinations of the above.

The composite proposed may be used in the production of rails and beams (1), pipes (10), rods (20), channels (30), angles (40), flatbars (50), "Z" (60), profiles (70), beams (80), corrugated plates  
25 (90), smooth plates (100) or structures (110) in which bolts (115) exist which join the beam and the column.

It is not considered necessary to extend this description for any expert in the matter to understand the scope of the invention and the advantages derived  
30 from it.

The materials, shape, size and arrangement of the components may be varied, provided this does not change the essentiality of the invention.

The terms in which the report specification been  
35 written should always be interpreted in the widest and

non-limiting sense.

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C L A I M S

- 1.- An improved arrangement to configure construction components characterised on being constituted as from  
5 the combination of plastic and metal, consisting of a plastic enveloping casting (2) or (12) or (22) or (32) or (42) or (52) or (62) or (72) or (82) or (92) or (102) or (112) surrounding and internal metallic structure (3) or (13) or (23) or (33) or (43) or (53) or (63) or  
10 (73) or (83) or (93) or (103) or (113), incorporating a metallic laminate or plate (4) and (4') or (84) or (114) and (114') for reinforcement in the bolted joints.
- 15 2.- An improved arrangement to configure construction components, according to the first claim, characterised in that the resulting combination may adopt the form or rails and beams (1), pipes (10), rods (20), channels (30), angles (40), flatbars (50), "Z" (60), profiles  
20 (70), beams (80), corrugated plates (90), smooth plates (100) or structures (110).

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# A B S T R A C T

An improved arrangement to configure construction components consisting of the combination  
 5 of metal and plastic to obtain a product with more mechanical properties than those of the separate materials, constituted by an internal metal structure covered by a plastic surrounding (2) or (12) or (22) or (32) or (42) or (52) or (62) or (72) or (82) or (92) or  
 10 (102) or (112) to which, a metallic laminate is joined (4) and (4') or (84) or (114) and (114') for reinforcement in the bolted joints, applying the resulting composite in the manufacture of rails and beams (1), pipes (10), rods (20), channels (30), angles  
 15 (40), flatbars (50), "Z" (60), profiles (70), beams (80), corrugated plates (90), smooth plates (100) or structures (110).

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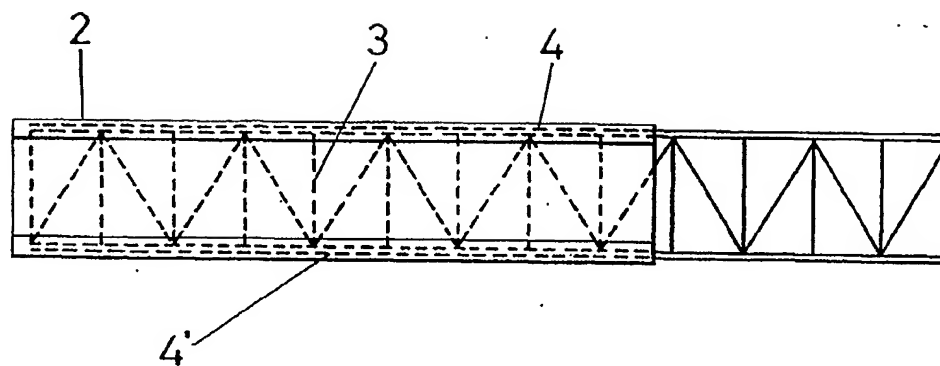


FIG. 1

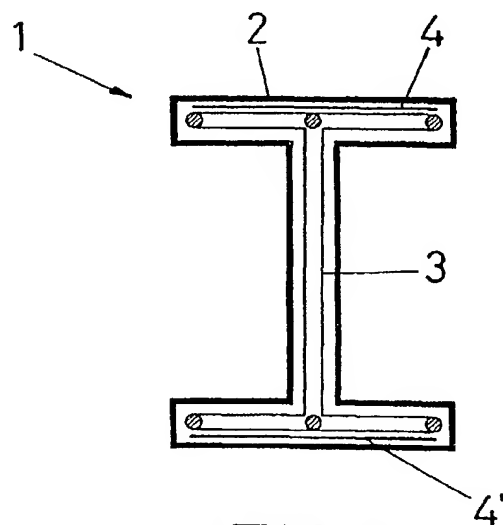
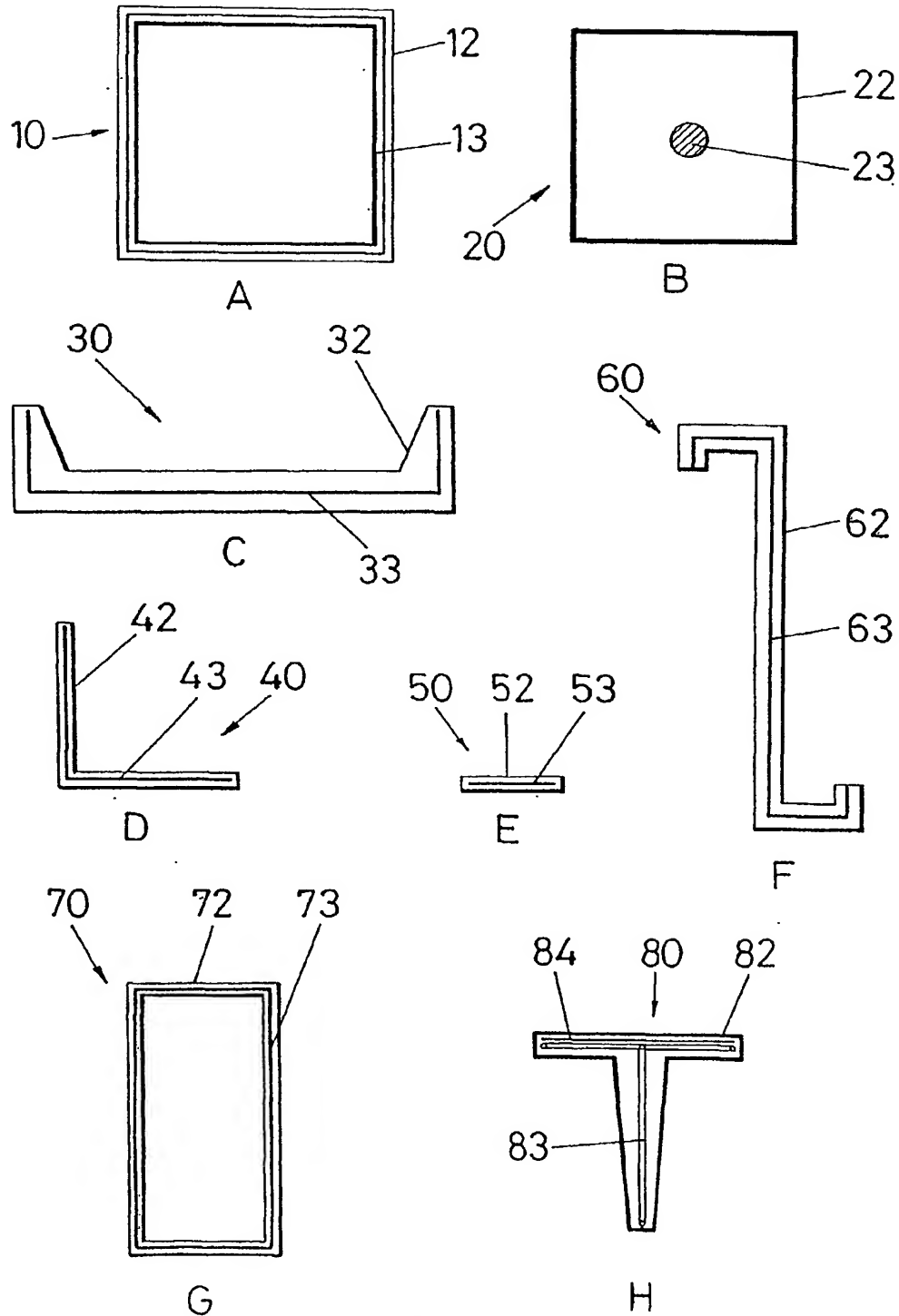


FIG. 2



3/3

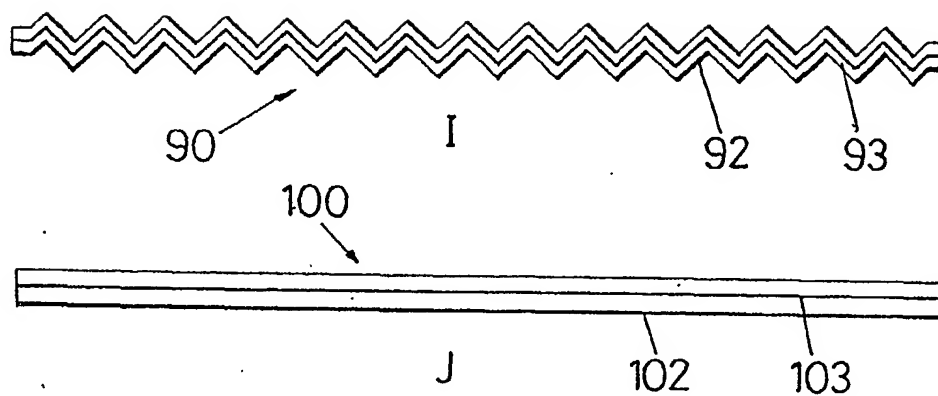


FIG. 4

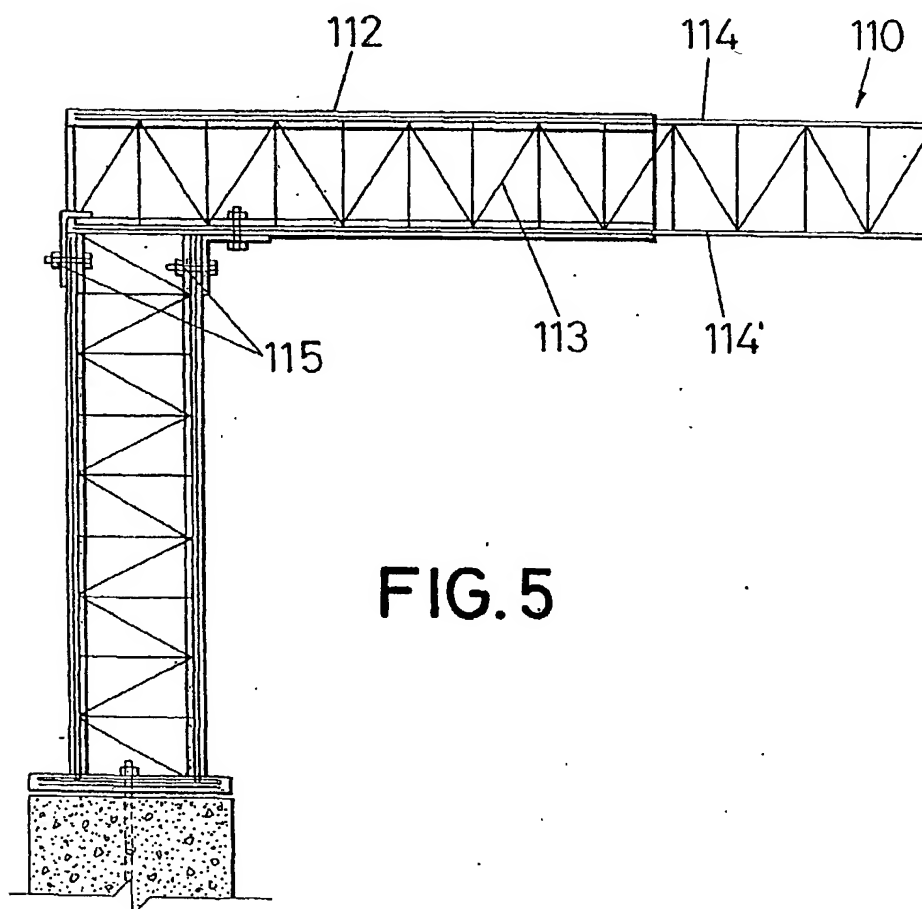


FIG. 5

**DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION  
DECLARACIÓN Y CARTA PODER PARA SOLICITUD DE PATENTE**

**Spanish Language Declaration**

Como inventor nombrado, por este medio declaro que :  
As a below named inventor, I hereby declare that:

Mi residencia, dirección postal y ciudadanía son los que se indican a continuación, al lado de mi nombre.

My residence, post office address and citizenship are as stated below next to my name.

Considero que soy el primer, original y único inventor (si hay un solo nombre indicado a continuación) o el primer, original y unico inventor conjunto (en caso de múltiples nombres a continuación) de la materia objeto de la reivindicación y para la cual se solicita una patente sobre el invento titulado:

**IMPROVED ARRANGEMENT TO CONFIGURE CONSTRUCTION**

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**IMPROVED ARRANGEMENT TO CONFIGURE CONSTRUCTION**

cuya descripción se anexa a la presente, salvo que se marque la siguiente casilla:  
the specification of which is attached hereto unless the following box is check (check only one item below)

☒ **<x >** fué presentada el Septiembre 13, 2001 el número de solicitud de Estados Unidos 10/031,250 o número de solicitud internacional PCT/ES00/00343 y modificada el día \_\_\_\_\_ (de ser precedente)

was filed on September 13, 2001 as United States Application No. or PCT International Application No. PCT/ES00/00343 and was amended on \_\_\_\_\_ (if applicable).

Por este medio declaro que he revisado y que entiendo el contenido de la descripción que antecede, incluso las reivindicaciones, según esten modificadas de acuerdo con cualquier modificación arriba citada.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

Por este medio reconozco mi deber de divulgar información que sea esencial con respecto a la patentabilidad según se define en el Título 37 del Código de Regulaciones Federales § 1.56.  
I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

Por este medio reclamo prioridad extranjera bajo el Título 35, Código de Estados Unidos, § 119(a)-(d) o § 365(b) de cualquier o cualesquier solicitud(es) de patente o certificado de inventor extranjera(s) o bajo el Título 35, § 365(a) del mismo Código, de cualquier solicitud internacional PCT en que se designa por lo menos un país distinto a los Estados Unidos, dicha(s) solicitud(es) o dicho(s) certificado(s) enumerándose a continuación, y, marcando la(s) siguiente(s) casillas también he identificado cualquier solicitud de patente o de certificado de inventor extranjera que tenga una fecha de presentación anterior a la fecha de solicitud sobre la cual se reclama prioridad

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) on any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or any PCT International application having a filing date before that of the application on which priority is claimed

PRIOR FOREIGN APPLICATIONS      PRIORITY CLAIMED  
SOLICITUD(ES) EXTRANJERA(S) ANTERIOR(ES)DERECHO DE PRIORIDAD

P200000423

02/23/2000

(Number)  
(Numero)

(Country)  
(País)

(Day/Month/Year Filed)  
(Día/Mes/Año de presentación)

Por este medio reclamo el beneficio bajo el Título 35, Código Estados Unidos- § 119(e) de cualquier o cualesquier solicitud(es) provisional(es) de Estados Unidos enumerada(s) a continuación.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)  
(No. de solicitud)

(Filing Date)  
(Fecha de Presentación)

Por este medio reclamo el beneficio bajo el Título 35, Código de Estados Unidos~ §120 de cualquier o cualesquier solicitud(es) de Estados Unidos o, bajo el Título 35, § 365(c) del mismo Código, de cualquier solicitud internacional PCT en que se designan los Estados Unidos, dicha(s) solicitud(es) enumerándose a continuación y, en la medida en que el objeto de cada una de las reivindicaciones de la presente solicitud no hubiese sido divulgado en la solicitud anterior de Estados Unidos o internacional PCT, según lo dispuesto en el primer párrafo del Título 35, Código de Estados Unidos, § 112, reconozco el deber de divulgar información que fuere esencial con respecto a la patentabilidad, según se define en el Título 37, Código de Regulaciones Federales, § 1.56 que hubiere llegado a estar disponible entre la fecha de presentación de la solicitud anterior y la fecha de presentación nacional o internacional PCT de la presente solicitud.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s), or §365(c) of any PCT International application designating the United States, listed and, insofar as the subject matter of each of the claims of this application in not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

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Appl. No.

---

Filing Date

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Status

(patented, pending, abandoned)

Por este medio manifiesto que todas las declaraciones hechas en la presente en base a mis propios conocimientos son verdaderas y que considero que son verdaderas todas las declaraciones hechas en base al mejor saber y entender adicionalmente manifiesto que dichas declaraciones se hicieron con conocimiento de que las declaraciones falsas intencionales y similares son punibles por multa o encarcelamiento o ambos, bajo la Sección 1001 del Título 18 del Código de Estados Unidos y que dichas declaraciones falsas intencionales pueden poner en peligro la validez de la solicitud o de cualquier patente concedida en virtud de la misma.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Como inventor nombrado, por este medio designo al siguiente abogado o abogados y/o agente o agentes para que trámiten la siguiente solicitud y realicen todas las gestiones ante la Oficina de Patentes y Marcas Registradas en relación con la misma: indique el nombre y número de registro



POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

2 Horst M. Kasper (No. 28,559)

Richard T. Laughlin (No 17,264)

Envíe la correspondencia a :  
Send Correspondence to:

1-00 Horst M. Kasper,  
13 Forest Drive, Warren, N.J. 07059

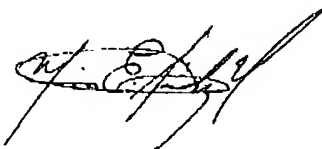
Dirija las llamadas telefónicas a:  
Direct Telephone Calls to.

Horst M. Kasper, (908)626-1717

Nombre completo del único o primer inventor:  
Full name of sole or first inventor.

J-00 Marino Sanchez Mina

Firma del inventor  
Inventor's signature



Fecha  
Date

10 JUN. 2002

Domicilio

Residence Siro, 8  
E-28007 Madrid,  
Spain EOX

Nacionalidad

Citizenship Dominican Republic

spandc(GES201DE(June 3, 2002(ssp